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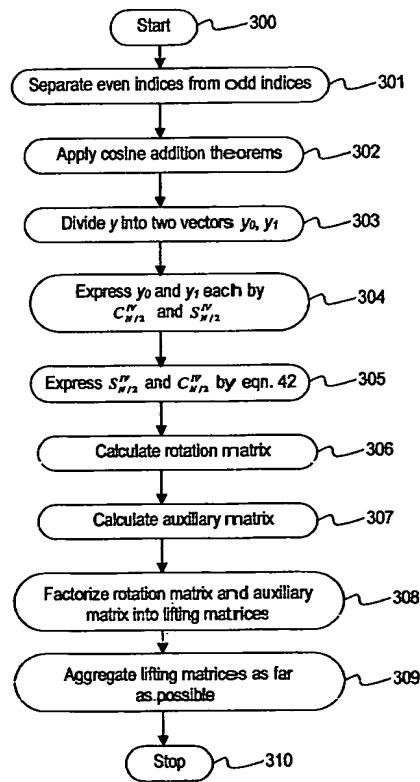
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(54) Title: PROCESS AND DEVICE FOR DETERMINING A TRANSFORMING ELEMENT FOR A GIVEN TRANSFORMATION FUNCTION, METHOD AND DEVICE FOR TRANSFORMING A DIGITAL SIGNAL FROM THE TIME DOMAIN INTO THE FREQUENCY DOMAIN AND VICE VERSA AND COMPUTER READABLE MEDIUM



(57) Abstract: According to the process for determining a transform element for a given transformation function, which transformation function comprises a transformation matrix and corresponds to a transformation of a digital signal from the time domain into the frequency domain or vice versa, the transformation matrix is decomposed into a rotation matrix (306) and an auxiliary matrix (307) which, when multiplied with itself, equals a permutation matrix multiplied with an integer diagonal matrix. Further, the rotation matrix (306) and the auxiliary matrix (307) are each decomposed into a plurality of lifting matrices (308). Further, the transforming element is determined to comprise of a plurality of lifting stages (309) which correspond to the lifting matrices (308). The invention further provides a method for the transformation of a digital signal from the time domain into the frequency domain according to the transforming element determined by the process described above.



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